JDSF Newsletter
Jackson Demonstration State Forest
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TIMBER SALE DEMONSTRATION/EXPERIMENTAL PROJECTS

A CURRENT STATUS

Norman D. Henry[1/]

As part of an effort to improve the D. & E. (demonstration and experimental) program on Jackson State Forest, each timber sale for the past several years has been assessed on how the management and harvesting activities designated for that harvest area will lend themselves to some D. & E. project. So as not to restrict any management options, any activity relating to a timber sale is considered a candidate subject for D. & E. work, especially if new techniques and materials are involved. Some timber sale areas are identified as those in which major aspects of the sale can be worked into a suitable D. & E. project, whereas others have more limited objectives.

Our goals are to demonstrate and monitor both the short and long term results from the particular activity designated for each sale. Reporting the activity in some published form including the JDSF Newsletter or California Forestry Note format is an important priority.

Following is a descriptive summary of timber sale demonstration and experimental projects that illustrate the type and range of projects which have been initiated to date.

Starting in 1979, which was a transition year in this type of planning, all three sales for that year included in the sale contract a provision which was termed two-stage road construction. This provision required a crawler tractor no larger than a D6-C or equivalent using a square or "U" blade to construct a pioneer trail near the lower limit of the road right-of-way, forming a bench to catch the side-cast material from the larger road construction tractor.

After this initial project, James Creek '79 was the site of a prescribed burn demonstration. In the coming year, the Two Rock '79 sale area will form the basis for a commercial hardwood sale.

The first full operational year under the new policy was in 1980. A report from a research review committee appointed by the Director of Forestry on state forests was also received in that year. One recommendation of this report was that all future timber sales be based on some demonstrational or experimental plan.

1/ Demonstration & Experiment Forester II, Jackson Demonstration State Forest.

The Hare Creek '80 sale area was used as the basis for two studies. The first was a skid trail location study which compared a "logger's choice" versus a predesignated skid trail system in production rates, extent of ground disturbance and residual stand damage. The second study utilized an eleven-acre clearcut within the sale area to attempt to monitor the movement of the vector for the black stain disease in Douglas-fir.

In 1981, the Hare Creek study was concerned with the continuation of the study on the black stain disease in the coastal Douglas-fir and its management implications. The Two Rock '81 sale study emphasis was on drainage structures. An Armco steel multiplate archspan crossing was installed where there had been an old log bridge crossing. Installation and long term maintenance costs were the main objectives in this study.

This year, the 1982 sales, all of which were logged in the 1983 season, had D. & E. projects which ranged from clearcut treatments to road surfacing treatments. Five acres were clearcut in the Hare Creek '82 timber sale area with a high density of hardwoods as part of a study using different techniques to prepare the site for planting. Monitoring the regeneration survival and growth on each of the two sites will be the next phase of this study. Two and one-half acres were site-prepared using the hand lopping method while the remaining acreage was treated mechanically using a tractor equipped with a brush rake.

A portion of haul road was treated with calcium chloride on the Two Rock '82 sale area to compare the costs and benefits of special road surfacing treatments with the more conventional watering and blading. In addition, another archspan was installed on this sale, but in this case the span was made of aluminum instead of steel. Long term monitoring on these type structures will also be a necessary step besides analyzing the initial costs.

James Creek '82 utilized a variation on this same theme but the results could lead to a practical method for temporary crossings. Instead of installing a conventional culvert for a stream crossing, a portable bridge was put into place. Here the structure was called a Hamilton E-Z bridge and was installed with conventional logging equipment.

The 1983 sales will not be logged until the 1984 season but the plans are as follows. The Chamberlain Creek '83 timber sale will feature the use of TYPAR support/filter fabric for certain portions of the haul road to demonstrate the reduction of rutting under heavy loading. In addition, polyethylene culverts by Advanced Drainage Systems will be used in lieu of standard galvanized culvert to test this new material for culvert application. The study plan for James Creek '83 sale calls for the determination of the effectiveness of tilling skid trails and landings to improve planted seedling survival and growth. The other objectives are to evaluate the benefit/cost relationship of planting forest land following overstory removal and to monitor any change in skid trail soil erosion. The study plan for the Hare Creek sale area in 1983 utilized several different techniques to test their effectiveness in site preparation for regeneration work. Four compartments will be clearcut but the resulting slash will be treated differently in each one. Slash will be windrowed in one compartment while broadcast lopping to certain minimum specifications is required in the second. The last two will have lopping done within 100

feet of the road. In three of the compartments, burning will be done to clean the site while the fourth will be used as an unburned control. Subsequently, the purchaser will supply and plant 10,000 seedlings to the state's specifications.

The timber sales that are still in the planning stage will continue to have these type projects as an integral part of the harvest operation. Some of these projects will undoubtedly raise more questions than answers. These questions will be addressed in future sales.

TWO NEW PUBLICATIONS FROM JDSF

In May California Forestry Note No. 86 was released. Written by JDSF Experimental Forester I Dana Cole, the paper is entitled "Skid Trail Preconstruction: A Case Study of Logging Impacts and Productivity"(11 p.). After monitoring nearly 1,000 hours of equipment time and 1,400 skid cycles, the author found little difference in leave stand damage, areal extent of skid trails, and logging productivity regardless of whether or not skid trails were flagged and bladed prior to tree felling and logging. Certain situations were noted, however, where the author felt skid trail preconstruction was advantageous.

California Forestry Note No. 89 was released in October. Written by Roy A Woodward and Joseph Ontiveros, formerly graduate student aide and forestry aide, respectively, the paper is entitled "Observations of a Thirty-One-Year-Old Radiata Pine (Pinus radiata D. Don) Plantation in Northern California" (8 p.). The study summarizes growth of a radiata pine (also known as Monterey pine) plantation on JDSF. Disease, poor form, and overall poor survival were noted, and the authors state that more research on the genetics, pathology, and silviculture is needed before commercial plantations will be successful in the central north coast area.

Both of these recent publications are available by writing or calling JDSF.

FELLING DAMAGE IN OLD GROWTH OVERSTORY REMOVAL

Glen J. Pinoli[2/]

During the 1982 logging season an informal study was conducted on two residual old growth timber harvests. In the two east end sales, all conifers 22" dbh and greater were harvested resulting in an overstory removal.

A total of 144 redwood and 25 Douglas-fir trees were randomly selected for measurement following felling and bucking. All trees were measured from the bottom of the butt log to a top diameter of six inches subtracting any broken segments to obtain both gross and net volumes.

In tractor-logged areas JDSF sale contracts require purchasers to build tractor layouts for trees having volumes in excess of 2,500 board feet to minimize breakage. Cable tree-pulling methods are required for trees with volumes greater than 5,000 board feet. Tractors were generally used for cable pulling, although several large trees were pulled by an "Albatross" tree-puller, a converted 3-drum 6x6 Army vehicle. Due to its extreme line-carrying capacity - - it can pull up to 1,300 feet - - this machine can stay on existing haul roads, far from the tree being pulled. This reduces the need for ground disturbance by tractors and is especially useful for pulling trees in cable-logged areas.

The following table summarizes our findings:

2/ Forester I, Timber Sale Officer, Jackson Demonstration State Forest.

Category	Breakage (Percent)	Recoverable Wood (Percent)
Redwood less than 2,500 b.f.	3.3	96.7
Redwood 2,500 to 5,000 b.f.	4.8	95.2
Redwood greater than 5,000 b.f.	5.1	94.9
All redwood	4.2	95.8
Douglas-fir less than 2,500 b.f.	4.7	95.3
Douglas-fir 2,500 to 5,000 b.f.	2.8	97.2
All Douglas-fir	4.2	95.8

Overall breakage for redwood and Douglas-fir were identical, about 4.2 percent. For Douglas-fir, breakage was slightly lower in the larger tree sizes, illustrating the primary advantage of building layouts for the larger, more valuable trees.

For redwood, breakage increased slightly with tree size. The larger redwoods in this study may have been predisposed to greater breakage for the same reasons these old growth trees weren't cut during initial logging: poor form (limby, flat tops, etc.), located in difficult terrain, and a higher degree of strength-reducing incipient rot. We believe that without bed construction, however, this breakage would be much higher.

THE ASSISTANT BOSS

Our fifth staff person to be featured is Assistant Forest Manager John Griffen. John's interest in forestry began at an early age. As a youngster he attended YMCA summer camp in the Santa Cruz Mountains. The campers were allowed to work off part of their tuition by thinning and pruning the camp's young redwoods. While the other kids went swimming and rode horses, John was in the forest opening holes in the sky. After a day of smelling fresh sawdust, yelling "Timber!" and eating beans from a can, John was hooked. From that day on, he knew he wanted to be a lumberjack.

His dream took him to University of California Berkeley, where he graduated with a forestry degree in 1968. He spent a few years in the Bay Area working retail sales for Standard Oil (pumping gas) until he got his big break with Hammon, Jensen and Wallin, consulting foresters, working on a cruise of Redwood National Park.

After that he got on with the Los Angeles County Forestry Division at Heniger Flats, the County's main tree nursery, campground and environmental education center. There he got enough experience to pass the RPF exam in 1976 and qualify to be a CDF forester.

John came to JDSF in 1976 and started as a sale officer. In 1979 he was promoted to Assistant Manager, his current position. He handles many administrative duties, including our recreation program, firewood and miscellaneous wood products sales, timber inventory, long range management planning, and data processing. If John's not in his office, he can usually be found at the computer terminal.

John's wife, Kathi, teaches school in Mendocino. They have two children, Josh and Emily.